

REMARKS

Reconsideration of the present application is respectfully requested. Claims 1-56 were originally presented: Claims 37-56 have been withdrawn as being drawn to a non-elected invention, and claims 57-64 were previously added, so that claims 1-36 and 57-64 are presently pending. Claims 1 and 16 are in independent form.

In the Office Action dated October 11, 2006, the Examiner rejects claims 1-14, 16-35, and 57-64 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,254,766 to Sughrue et al. (hereinafter Sughrue). In support of this rejection, the Examiner asserts that Sughrue discloses each step of the claimed processes, with one exception. Although admitting that “Sughrue does not disclose including a promoter (or nickel) in the admixing step (a),” the Examiner goes on to allege that “it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have added such promoter to the mixture in the admixing step of (a) of Sughrue in order to achieve a promoted and effective catalyst composition, and in view of step (e) of the reference which teaches to impregnate the resulting calcined particulate with nickel.” Office Action page 3, lines 12-17. For at least the reasons detailed below, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness based on Sughrue.

To establish a *prima facie* case of obviousness based on a single prior art reference, the reference must teach or suggest all of the claim limitations. M.P.E.P. § 2143. Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness because, for example, the prior art reference relied on by the Examiner fails to teach or suggest each and every limitation of the claims of the present application. For example, independent claims 1 and 16 each recite the first step (a) of admixing a liquid, a zinc- or metal-containing compound, a silica-containing compound, alumina, and a *promoter* to form a mixture thereof. In the Office Action, the Examiner concedes that the prior art does not teach or suggest this limitation. *See* Office Action page 3, lines 12-13. Yet the Examiner contends that adding a promoter to the initial catalyst mixture would have been obvious to a person of ordinary skill in the art because it creates a “promoted and effective catalyst composition.” Office Action page 3, lines 12-17. Moreover, the Examiner contends that because Sughrue discloses impregnating a dried and calcined particulated mixture with a promoter, it would have been obvious to include the promoter in the initial mixture. However, the Examiner has pointed to nothing, either in the

prior art of record, or in the knowledge of the art generally, to support these assertions. Thus, the Examiner appears to be relying solely on “common knowledge” in making this rejection. Applicants note that only “[i]n limited circumstances, it is appropriate for an examiner to take official notice of facts not in the record or to rely on ‘common knowledge’ in making a rejection, however such rejections should be judiciously applied” and “[i]t is never appropriate to rely solely on ‘common knowledge’ in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based.” M.P.E.P. § 2144.03 (citing *Zurko*, 258 F.3d 1379, 1385, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001)). Therefore, the Examiner’s reliance solely on common knowledge cannot sustain a *prima facie* case of obviousness.

In addition, the Examiner has provided no evidence of a motivation to modify the process of Sughrue to include the step of admixing a promoter into the initial catalyst mixture. The mere fact that a reference *can* be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Sughrue does not teach, suggest, or even contemplate that the promoter be admixed in the initial step of preparing the composition. Rather, Sughrue teaches that the “primary components,” zinc oxide, alumina and silica, are combined into a “substantially homogenous mixture,” and the admixture is shaped into a particulate, which is dried and calcined before being impregnated with a nickel promoter. Col. 5, ll. 1-40. Thus, Sughrue only discloses introducing the promoter *after* calcining and drying the particulate and does not teach or suggest that the promoter be admixed with the initial composition components. To a person not skilled in the art of chemistry, this difference may seem trivial. In fact, the process of the present invention involves a fundamentally different chemistry than the process of Sughrue and would not be obvious to a person of ordinary skill in the art. For example, the nickel promoter in Sughrue is added to a composition that is chemically distinct from the individual zinc oxide, alumina and silica components with which the promoter is admixed in the present invention. This is because the process of Sughrue inherently involves the chemical transformation of the admixture components into an entirely different composition during the first drying and calcining step. Specifically, heat from the drying and calcining step would cause a chemical transformation of the zinc oxide, alumina and silica admixture resulting in a calcined particulate composition chemically distinct from the individual admixture components. X-Ray Diffraction Analysis of this calcined particulate confirms the presence of, for example, zinc aluminate.

Thus, impregnation of the nickel promoter on the calcined particulate in Sughrue is not analogous to admixing the promoter with zinc oxide, alumina and silica as in the present invention, and involves the interaction of chemically different components from the process of the present invention. Thus, it cannot be said that the present invention is obvious in light of Sughrue and this rejection must be overcome.

Further, there would be no motivation in Sughrue to add the promoter in the admixing step “in order to achieve a promoted and effective catalyst composition” as alleged by the Examiner, because Sughrue already reaches this result through impregnation. Moreover, there is nothing in the teachings of the prior art generally, or in the knowledge of persons of ordinary skill in the art that would teach or suggest modifying Sughrue to admix the promoter with the other components in the first step of preparing the catalyst composition. In catalyst preparation, admixing and impregnation are fundamentally different procedures, and as the foregoing arguments suggest, a person of ordinary skill in the art would not interpret the impregnation step of Sughrue as teaching or suggesting that the promoter could alternatively be admixed in the initial step of the catalyst preparation. In particular, conventional teachings in the art at the time the invention was made teach away from admixing the promoter with the other catalyst components in the initial mixture. Rather, the art suggests that admixing the active catalyst component within a support would be unsuccessful compared to impregnating a support, which involves depositing the active catalyst component onto the *surface* of the support. Thus, persons of ordinary skill in the art would clearly understand that impregnating techniques typically facilitate higher dispersion of the active catalyst component, which allows better contact with reactants. Conversely, it is well known in the art that admixing the active catalyst component within a support typically *decreases* dispersion, which in turn, would ordinarily decrease the effectiveness of the catalyst. Additionally, those having ordinary skill in the art would recognize that the hardness of a typical catalyst would ordinarily be weakened by admixing the active component in a support. Therefore, a person of ordinary skill in the art would have had no reasonable expectation of success for the proposed admixing modification, and would have understood impregnation, as disclosed in Sughrue, to be the prevailing and established technique for catalyst preparation. Accordingly, a person of ordinary skill in the art would have had no suggestion or motivation to modify Sughrue as suggested by the Examiner. Therefore, neither the teachings of prior art, nor the knowledge of persons of ordinary skill in the art generally

provide the requisite motivation to modify the process of Sughrue to arrive at the invention claimed in independent claims 1 and 16. Because Sughrue does not expressly or implicitly teach or suggest each and every limitation of independent claims 1 and 16, it cannot be said to render the present invention obvious, and such rejection must be withdrawn.

In view of the foregoing, Applicants respectfully submit that independent claims 1 and 16 are in condition for allowance. Additionally, while dependent claims 2-15, 57-58, and 61-62 which depend from claim 1, and claims 17-36, 59-60, and 63-64 which depend from claim 16, recite additional patentable features, these claims should also be in condition for allowance because they depend from patentable independent claims. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Thus, Applicants submit that the present application should now be in condition for allowance and such allowance is respectfully requested.

Should the Examiner have any questions, please contact the undersigned at (800) 445-3460. The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 19-0522.

Respectfully submitted,

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